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#### **REMARKS**

The present response is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in condition for allowance. Applicants assert that the present invention is new, non-obvious and useful. Prompt consideration and allowance of the claims is respectfully requested.

#### **Status of Claims**

Claims 1, 2, 4-22, and 26-31 are pending in the application.

Claims 2 and 8 have been canceled herein without prejudice or disclaimer.

New Claims 34-40 have been added in this submission. Applicants respectfully assert that the new claims add no new matter.

Claims 1, 8, 12-14, 20, 21, 26, 29 and 31 have been amended in this submission. Applicants respectfully assert that the amendments and additions to the claims add no new matter.

Accordingly, after claim additions, cancellations and amendments herein, claims 1, 4-22, 26-31 and 34-39 will be pending in the application.

#### **CLAIM OBJECTION**

In the Office Action, the Examiner objected to claim 14 because of informalities. Applicants have amended claim 14 to correct the informalities. Accordingly, Applicants respectfully request the objection be withdrawn.

#### **CLAIM REJECTIONS**

##### **35 U.S.C. § 112 Rejection**

In the Office Action, the Examiner rejected claims 8-11, 21 and 22 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

In accordance with the Examiner's observations, claim 8 has been canceled and 21 have been amended to remove the material found to be objectionable. Specifically, claim 21 has been amended to recite that the sensor comprises a second circuit board having a socket or slot configured for accommodating a side edge of said first circuit board. Accordingly,

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Applicants respectfully request that the Examiner withdraw his rejections under 35 U.S.C. § 112, first paragraph.

### 35 U.S.C. § 102 Rejections

In the Office Action, the Examiner rejected claims 1, 2, 4-20 and 31 under 35 U.S.C. § 102(b), as being anticipated by Havens et al. (U.S. Patent No. 5,780,834). Applicants respectfully traverse this rejection in view of the remarks that follow.

Applicants first note that claim 2 has been canceled and therefore, the rejection thereof is moot.

Each of amended independent claims 1 and 31 includes, *inter alia*:

a first rigid circuit board [having] an image sensor ... and a second rigid circuit board ... extending at an angle of about 90° [substantially perpendicularly] from ... the first circuit board ... said second circuit board having disposed thereon at least one illumination source illuminating in a direction substantially perpendicular to said second circuit board.

Similarly, amended independent claim 13 includes, *inter alia*:

a first rigid circuit board having disposed thereon an image sensor, said first circuit board extending substantially perpendicularly to [a] second circuit board, wherein said second circuit board has disposed thereon at least one illumination source illuminating in a direction substantially perpendicular to said second circuit board.

Similarly, amended independent claim 20 includes, *inter alia*:

[a] circuit board extending substantially perpendicularly to [an] image sensor, wherein said circuit board has disposed thereon at least one illumination source illuminating in a direction substantially perpendicular to said circuit board.

Applicants assert that Havens does not teach at least these features. Havens teaches a mother board (54), an imager board (45), and an LED board (14). The imager board (45) has an imager (43), and the LED board (14) has LEDs (20) and a spotting light (50). In contrast to Applicants' amended independent claims, in which the circuit board that has an image sensor or the sensor itself is perpendicular to the plane of the circuit board that has an illumination source, Havens teaches that the imager board (45) is parallel to the plane of the LED board (14). Havens does not teach that the illumination source illuminates in a direction substantially perpendicular to the circuit board, which is itself disposed substantially

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perpendicular to the first circuit board having an image sensor or to the image sensor itself.

Therefore, Havens does not teach the aforementioned limitations of each of amended independent claims 1, 13, 20 and 31. Each of claims 4-12 and 14-19 depends from one of amended independent claims 1 and 13, and necessarily includes all of its limitations. Therefore, dependent claims 4-12 and 14-19 are likewise allowable over Havens. Accordingly, Applicants respectfully request withdrawal of this rejection.

In the Office Action, the Examiner rejected claims 13-20 and 26-31 under 35 U.S.C. § 102(a) or (e), as being anticipated by Gazdzinski (U.S. Patent Application Publication No. 2002/0103417). Applicants respectfully traverse this rejection in view of the remarks that follow.

Each of amended independent claims 13, 20 and 31 includes an illumination source illuminating in a direction substantially perpendicular to the circuit board on which it is disposed.

Gazdzinski's Fig. 5 shows printed circuit board assemblies (PCBAs) 510 for mounting LED 504 and a component behind CCD array 402, which the Examiner equates with Applicants' second circuit board. Gazdzinski's LED 504 emits light in a direction substantially parallel to the circuit board on which it is disposed, not perpendicular to the circuit board on which it is disposed, as required in Applicants' amended independent claims 13, 20 and 31. Therefore, Gazdzinski does not teach the aforementioned limitations of each of Applicants' amended independent claims 13, 20, and 31.

In addition, amended independent claim 26 includes, *inter alia*:

a rigid circuit board extending in a longitudinal direction; and an antenna  
... substantially coiled about the circuit board with a coil rotation axis  
parallel to said longitudinal direction.

Gazdzinski teaches transmitting via inductive coils. Applicants' claim 26 differentiates Gazdzinski's coils by claiming that the coil rotation axis of the antenna is parallel to the longitudinal direction of a circuit board. The coils shown in Fig. 5 of Gazdzinski are wrapped about the housing to form rings which follow the inner circumference of the device housing 302. Thus, the coil rotation axis, i.e., the axis about which the individual turns of the coil rotate, likewise follows the circumference of the device housing 302. Accordingly, the coil rotation axis of Gazdzinski's coils is circumferential

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about the device housing, not parallel to the longitudinal (i.e., linear) direction in which the circuit board extends, and Gazdzinski does not teach this limitation of amended independent claim 26.

Therefore, Gazdzinski does not teach the aforementioned limitations of each of amended independent claims 13, 20, 26 and 31. Each of claims 14-19 and 27-30 depends from one of amended independent claims 13 and 26, and necessarily includes all of its limitations. Therefore, dependent claims 14-19 and 27-30 are likewise allowable over Gazdzinski. Accordingly, Applicants respectfully request withdrawal of this rejection.

In the Office Action, the Examiner rejected claims 26-30 under 35 U.S.C. § 102(b), as being anticipated by Eguchi et al. (JP 2001104241). Applicants respectfully traverse this rejection in view of the remarks that follow.

Eguchi shows three rigid circuit boards (110), (120), and (130) in Fig. 4. It is noted that the antenna control board (140) is meant to wrap around the capsule body, and therefore is not rigid. The antenna control board (140) includes an antenna (141). It is clear from Fig. 5 of Eguchi that the device of Fig. 4 is assembled by stacking the three rigid circuit boards (110), (120), and (130) and wrapping the antenna control board (140) as a cylinder around the three, parallel circuit boards. The antenna (141) forms circular rings of the cylinder to encircle the three circuit boards. In this assembled configuration, as shown in Fig. 5, the circuit boards (110), (120), and (130) extend in a direction along a cross-section of the capsule. Antenna (141) is not “coiled” per se and therefore has no “coil rotation axis”. Although the rings of antenna (141) do encircle an axis, the axis the antenna (141) encircles is not in the direction that the circuit boards extend, as required in Applicants’ amended independent claim 26. Instead, the antenna (141) encircles the axis traversing the length of the capsule.

Furthermore, amended independent claim 29 includes, *inter alia*:

an antenna ... disposed within and spaced from [a] housing, and substantially between [a] power source and [a] imager.

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Applicants assert that Eguchi does not teach this feature.

Eguchi shows, in the drawing on the Abstract of the Japanese Application, that antenna (141) is directly adjacent to the capsule housing (55), and is not spaced from the housing, as required in Applicants' amended independent claim 29. Furthermore, Eguchi's antenna (141) is wrapped around and peripheral to both the power source (101) and the imager (111), and is not positioned substantially between the power source and the imager, as required in Applicants' amended independent claim 29.

Therefore, Eguchi does not teach the aforementioned limitations of each of Applicants' amended independent claims 26 and 29.

Each of claims 27, 28 and 30 depends from one of amended independent claims 26 and 29, and necessarily includes all of its limitations. Therefore, claims 27, 28 and 30 are likewise allowable over Eguchi. Accordingly, Applicants respectfully request withdrawal of this rejection.

### 35 U.S.C. § 103 Rejections

In the Office Action, the Examiner rejected claims 1, 2, and 4-7 under 35 U.S.C. § 103(a), as being unpatentable over Gazdzinski in view of Mizuno et al. (U.S. Patent Application Publication No. 2002/0198439). Applicants respectfully traverse this rejection in view of the remarks that follow.

As stated above, amended independent claim 1 includes an illumination source illuminating in a direction substantially perpendicular to the circuit board on which it is disposed. By contrast, Gazdzinski's Fig. 5 shows printed circuit board assemblies (PCBAs) (510) for mounting LED 504 and a component behind CCD array 402, which the Examiner equates with Applicants' second circuit board. Gazdzinski's LED 504 emits light in a direction substantially parallel to the plane of the circuit board on which it is disposed, not perpendicular, as required in Applicants' claim. Mizuno does not cure the deficiencies of Gazdzinski. Accordingly, amended independent claim 1, and claims 4-7 depending therefrom, are allowable.

Applicants note again that claim 2 has been canceled and therefore, the rejection thereof is moot.

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Accordingly, Applicants respectfully request withdrawal of the rejections of the claims under 35 U.S.C. § 103.

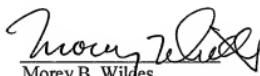
New claims 34-40 have been added in this submission as directed to the presence of a light guide for altering the path of light emitted from said illumination source and to the limitation that the path of light emitted is altered in a direction parallel to said second circuit board. Applicants contend that these claims are allowable over the cited references.

In view of the foregoing amendments and remarks, the pending claims are deemed to be allowable. Their favorable reconsideration and allowance is respectfully requested.

Should the Examiner have any question or comment as to the form, content or entry of this Amendment, the Examiner is requested to contact the undersigned at the telephone number below. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Please charge any fees associated with this paper to deposit account No. 50-3355.

Respectfully submitted,

  
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Dated: March 23, 2009

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